AMENDMENTS TO THE CLAIMS

1. - 27. (Canceled)

28. (Previously presented) The method of claim 65 wherein the fluidized bed of catalyst material comprises a solid mineral material having the capacity for adsorbing organic materials, and wherein the method includes directing the influent in the reactor through the solid mineral material and utilizing the solid mineral material to adsorb organic materials from the influent.

29. (Previously presented) The method of claim 28 wherein the solid mineral material is doped with metallic substances.

30. (Canceled)

31. (Previously presented) The method of claim 65 including selecting the size of particles forming the catalyst material such that the size of the individual particles is of a grading less than 100μm.

32. (Previously presented) The method of claim 31 wherein the particle size of the catalyst material has a size grading between about 10nm and about 40μm.

33. (Previously presented) The method of claim 65 wherein the catalyst material is selected from the group comprising alumina, titanium, coal, activated carbon, polymetallic oxides, and derivatives thereof.

34. (Previously presented) The method of claim 65 wherein directing the treated water through the membrane filtration unit comprises directing the treated water through one or more microfiltration membranes.

35. (Previously presented) The method of claim 65 wherein directing the treated water through the membrane filtration unit comprises directing the treated water through one or more ultrafiltration membranes.

36. (Previously presented) The method of claim 65 wherein directing the treated water through the membrane filtration unit comprises directing the treated water through one or more nanofiltration membranes.

37. (Previously presented) The method of claim 65 wherein directing the treated water through the membrane filtration unit includes directing the treated water through a mineral filtration unit.

38. (Previously presented) The method of claim 65 wherein directing the treated water through the membrane filtration unit includes directing the treated water through an organic filtration unit.

39. (Canceled)

40. (Previously presented) The method of claim 65 wherein the oxidizing gas comprises at least one oxidant taken from the group including air, ozone, ozoned air, nitrogen oxide, oxygen, and derivatives thereof.

41. (Previously presented) The method of claim 65 including adding H_2O_2 into the reactor.

42-43. (Canceled)

44. (Previously presented) The method of claim 65 wherein the influent is not subjected to mechanical stirring within the reactor.

45. (Previously presented) The method of claim 65 including contacting the influent with the catalyst material for a period of about 5 minutes to about 3 hours.

46. (Previously presented) The method of claim 45 including contacting the influent with the catalyst material for a period of about 30 minutes to about 60 minutes.

47. (Previously presented) The method of claim 65 including providing a suction source disposed external to the reactor and operatively connecting the suction source to the membrane filtration unit for inducing filtered effluent from the filtration membrane unit and from the reactor.

48. (Previously presented) The method of claim 47 wherein the suction includes a pressure of less than 1 bar.

49. (Previously presented) The method of claim 47 wherein the suction includes a pressure is between 0.1 bars and 0.8 bars.

50-54. (Canceled)

55. (**Currently amended**) The system of claim [[71]] 70 wherein the catalyst material comprises a solid mineral material having the capacity for adsorbing organic materials.

56. (Canceled)

57. (Previously presented) The system of claim 55 wherein the bed of catalyst material includes particles and wherein the size of the particles is of a grading less than 100 µm.

58. (Canceled)

59. (**Currently amended**) The system of claim [[71]] 70 wherein the catalyst material has a concentration of approximately 0.5 g/l and 50 g/l in the reactor.

60. (Previously presented) The system of claim 70 wherein the catalyst material is boehmite alumina which has been calcined at a temperature of less than 600°C

61. (Previously presented) The system of claim 60 wherein the boehmite alumnia is enriched in metallic substances.

62. (Previously presented) The system of claim 70 wherein the catalyst material has a diameter of less than approximately 50µm.

63. (Previously presented) The system of claim 62 wherein the catalyst material has a diameter of approximately 30µm.

64. (**Currently amended**) The system of claim 70 wherein the membrane filtration unit includes a plurality of membranes ~~each having a thickness,~~ and wherein the type of membranes disposed therein ~~thickness of the membranes~~ is based on a dimension of the catalyst material.

65. (Previously presented) A method of treating an aqueous influent containing organic matter, the method comprising:

a. injecting an oxidizing gas into a bottom portion of a vertical oriented column reactor;

b. suspending a bed of catalyst material in the column reactor to form a fluidized bed of catalyst material in the reactor wherein at least a portion of the fluidized bed is disposed in the lower portion of the column reactor;

c. wherein the oxidizing gas injected into the column reactor functions to suspend the bed of catalyst material in the reactor;

d. injecting the influent to be treated into the bottom portion of the column reactor where the influent is contacted with the oxidizing gas in the presence of the fluidized bed of catalyst material that promotes the oxidation reaction of organic material in the influent or promotes the adsorption of organic material by the bed of catalyst material thereby yielding treated water;

e. wherein the column reactor includes an immersed membrane filtration unit disposed in the upper portion of the column reactor and where in at least a portion of the fluidized bed of catalyst material is maintained below the membrane filtration unit in the column reactor;

f. after directing the influent through the fluidized bed of catalyst material and oxidizing gas in the lower portion of the column reactor, filtering at least a first portion of the treated water in the immersed membrane filtration unit disposed in the upper portion of the column reactor forming a filtered influent;

g. directing the filtered influent from the reactor;

h. bypassing the immersed membrane filtration unit with at least a second portion of the treated water such that the second portion of the treated water is non-permeated treated water;

i. recirculating at least a portion of the non-permeated treated water from the upper portion of the column reactor, through a recirculation line that lies outside of the column reactor and back into the lower portion of the column reactor; and

j. recirculating at least a portion of the oxidizing gas from the upper portion of the column reactor, through a gas recirculation loop disposed outside of the column reactor and back into the lower portion of the column reactor.

66. (Previously presented) The method of claim 65 including forming at least some of the catalyst material on the surfaces of the membrane filtration unit, and directing at least some of the influent through the catalyst material formed on the surface of the membrane filtration unit.

67. (Previously presented) The method of claim 65 wherein the membrane filtration unit includes a series of membranes and the method includes utilizing the oxidizing the gas to:

i. promote the oxidation reaction of organic material in the influent;

ii. suspend the catalyst material in the column reactor to form the fluidized bed; and

iii. limit clogging of the membranes of the membrane filtration unit due to the mechanical action of the oxidizing gas on the membranes which in turn improves the flow of treated water through the membranes.

68. (Previously presented) The method of claim 67 wherein oxidation of the influent and filtration by the membrane filtration unit both occur in a single chamber formed by the column reactor.

69. (Previously presented) The method of claim 68 wherein the catalyst material is boehmite alumina.

70. (Previously presented) A system for oxidizing and filtering an aqueous influent containing organic matter, the system in operation comprising:

a. a single chamber column reactor oriented in a vertical configuration and having a bottom portion and an upper portion;

b. an influent inlet formed in the bottom portion of the column reactor for permitting the influent to enter the bottom portion of the column reactor;

c. a fluid bed of catalyst material disposed in the column reactor and wherein a substantial portion of the fluid bed of catalyst material is disposed in the lower portion of the column reactor;

d. an oxidizing gas inlet formed in the bottom portion of the column reactor for injecting an oxidizing gas into the bottom portion of the column reactor and for oxidizing the organic material in the influent and for suspending the catalyst material in the column reactor and forming the fluidized bed of catalyst material;

e. a membrane filtration unit for filtering the treated influent and producing a filtered influent, the membrane filtration unit being disposed in the upper portion of a column reactor over a substantial portion of the fluidized bed such that the influent injected into the bottom of the column reactor moves upward through the fluidized bed and is treated therein prior to reaching the membrane filtration unit;

f. a recirculation line extending exteriorly of the reactor for directing a non-permeated treated water stream from the upper portion of the column reactor into a bottom portion of a column reactor such that the recirculation line is operative to transfer non-permeated treated water from the upper portion of the column reactor, through the exterior recirculation line and into the bottom portion of the column reactor; and

g. an oxidizing gas recirculation line extending exteriorly of a column reactor for transferring oxidizing gas from the upper portion of the column reactor,

through the exterior recirculation line and into the bottom portion of the column reactor.